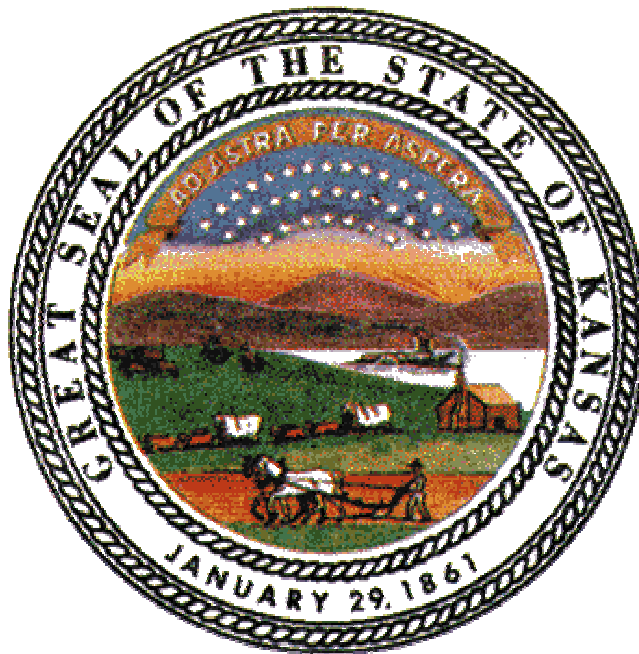


VISION SCREENING GUIDELINES: For Infants, Toddlers, Children and Youth



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VISION SCREENING GUIDELINES

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INTRODUCTION

The philosophy for preventive health services is to identify health problems or potential health problems at the earliest possible time, to promote early intervention for those problems, and to promote optimum health in children and youth. Where eye health is concerned, each child should have a complete vision screening prior to age 3 in order to detect potential acuity or oculomotor problems and facilitate effective early treatment through referral and follow-up.

In addition to detecting potential vision problems, vision screening programs are valuable in raising the awareness of parents, teachers, early interventionists, day care providers and the community to the importance of eye care. Another screening benefit is the identification of children who may need special education services because of a visual impairment.

The final but most important aspect of the screening program is follow-up. The child who does not pass the vision screening should receive a professional eye examination. If the children referred do not receive professional attention, the vision screening program has not accomplished its mission. According to the American Optometric Association, a child's first professional eye examination should be scheduled at 6 months of age (or sooner if signs or symptoms warrant). When no abnormalities are detected at this age, the next examination should be scheduled at age 3.¹

The goals of the Kansas vision screening program are parallel with the philosophy of early identification and intervention. The goals are:

- ◆ Ensure the inclusion of vision screening in all health assessments for children and youth (birth to 21 years).
- ◆ Promote remediation of identified vision problems at the earliest possible time.

Objectives of the Kansas vision screening program are to:

- ◆ Utilize uniform screening guidelines and referral criteria throughout the state.
- ◆ Collaborate on an interagency basis for intervention of identified problems.
- ◆ Follow-up on all referrals where evaluation and/or treatment is recommended.
- ◆ Maintain vision records on children and youth and document vision screening activities.

These guidelines should be utilized for all age children and youth (birth to 21 years) in child health programs including EPSDT (KAN Be Healthy) screening, well child screening, Part C early intervention screening, and school screening. They are designed to be used in conjunction with child health standards of care.

¹ American Optometric Association, Clinical Practice Guidelines, "Pediatric Eye and Vision Examinations," 2nd Edition, April 2002

All vision screeners in child health programs should meet the same standard. The vision screening workshops will focus on skills required for all vision screeners who screen children and youth birth through age 21. Screeners should review the vision screening guidelines periodically to maintain basic proficiency levels. It is each screener's responsibility to attend a workshop when the screener decides it is necessary to be retrained in basic skills. **Exception:** Screeners providing vision screening for Part C Infant-Toddler Services, shall retrain in basic skills every three years.

When following these guidelines, it is understood that:

1. Protocols and pass/fail criteria, as described in the published test by the commercial company, take precedence over directions and pass/fail criteria in the guidelines.
2. Except in unusual circumstances, or when there is an obvious problem needing immediate attention, the vision screener should rescreen failed tests before making a referral.

BACKGROUND

Good vision is essential for proper physical development and educational progress in growing children. The visual system in the young child is not fully mature. Equal input from both eyes is required for proper development of the visual centers in the brain. If a growing child's eye does not provide a clear focused image to the developing brain, then permanent irreversible loss of vision may result.²

Eye examination and vision assessment are vital for the detection of conditions that result in blindness, signify serious systemic disease, lead to problems with school performance, or at worst, threaten the child's life. Through careful evaluation of the ocular system, retinal abnormalities, cataracts, glaucoma, retinoblastoma, strabismus, and neurological disorders can be identified, and prompt treatment of these conditions can save a child's vision or even life.³

Children at risk for eye problems (e.g., prematurity, family history of congenital cataracts, retinoblastoma, metabolic or genetic diseases,) demonstrate a much higher incidence of vision defects. It is important that this population be included in vision screening programs so learning problems are not compounded.

Color vision problems are usually hereditary. The early detection of color vision problems is important because many toddler, preschool and elementary school games, activities, educational supplies and tasks are color oriented. Color vision problems are not a disease and are not treatable. However, it is important to provide information on color discrimination problems to parents and teachers.

Vision problems generally are not the direct cause of learning disorders; however, they can interfere with children's abilities to perform to their potential.⁴ Because children do not complain of visual difficulties, visual acuity measurement (vision screening)⁵ plays an important role in identifying potential vision problems and in promoting eye health as early as possible.

² American Academy of Ophthalmology, "Vision Screening for Infants and Children Policy," October 2001.

³ American Academy of Pediatrics, "Policy Statement", Vol. 111, Number 4, April 2003, pp. 902-907.

⁴ American Optometric Association, Clinical Practice Guidelines, "Pediatric Eye and Vision Examinations," 2nd Edition, April 2002.

⁵ C. Jarvis, *Physical Exam and Health Assessment*, 2nd ed., W.B. Sanders, Philadelphia, PA., 1996.

KANSAS VISION SCREENING LAWS AND REGULATIONS

Kansas schools, including all public, private and parochial schools, are required by law to provide vision screening to school age children at periodic intervals. The laws specifically read as follows:

K.S.A.

Chapter 72.—SCHOOLS

Article 52.—HEALTH PROGRAMS

VISION TESTING AND SAFETY

72-5204. Definitions. As used in this act:

- (a) “School board” means the governing body of any school;
- (b) “school” means all elementary and high schools;
- (c) “basic vision screening” means an eye testing program for each child based on a test chart which is graduated as to size of symbols, or the so-called Snellen test, or any other system or method of testing equal thereto or better in the judgment of the school board.

History: L. 1959, ch. 310, § 1; June 30.

72-5205. BASIC VISION SCREENING REQUIRED, exception; eye examination for conditions impairing reading ability. (a) (1) Each school board shall provide basic vision screening without charge to every pupil enrolled in each school under the governance of such school board not less than once every two (2) years. A teacher shall perform all such tests or some other person designated by the school board. The results of the test and, if necessary, the desirability of examination by a qualified physician, ophthalmologist or optometrist shall be reported to the parents or guardians of such pupils. Information relating to the desirability of examination by a qualified physician, ophthalmologist or optometrist shall not show preference in favor of any such professional person.

(2) The requirements of this subsection shall not apply to a pupil who has had a basic vision screening examination within six months prior to the provision of basic vision screening in the school in which the pupil is enrolled.

(b) Each pupil needing assistance in achieving mastery of basic reading, writing and mathematics skills shall be encouraged to obtain an eye examination by an optometrist or ophthalmologist to determine if the pupil suffers from conditions, which impair the ability to read. Expense for such examination, if not reimbursed through Medicaid, Healthwave, private insurance or other governmental or private program, shall be the responsibility of the pupil's parent or guardian.

History: L. 1959, ch. 310, § 2; L. 2001, ch. 215, § 15; July 1.

72-5207. Eye protective devices required when participating in certain courses.

Every student and teacher in all schools, colleges, and universities or other educational institutions participating in any of the following courses:

(A) Vocational, technical or industrial arts shops or laboratories involving experience with:

1. Hot molten metals, or other molten metals;
2. Milling, sawing, turning, shaping, cutting, grinding, or stamping of any solid materials;
3. Heat treatment, tempering, or kiln firing of any metal or other materials;
4. Gas or electric arc welding, or other forms of welding processes;
5. Repair or servicing of any vehicle;
6. Caustic or explosive materials;

(B) Chemical or combined chemical-physical laboratories involving caustic or explosive chemicals or hot liquids or solids, or injurious radiations, or other hazards not enumerated; is required to wear appropriate industrial quality eye protective devices at all times while participating in such courses or laboratories. Such devices may be furnished for all students and teachers, and shall be furnished for all visitors to such classrooms and laboratories. Such devices may be purchased in large quantities and sold at cost to students and teachers.

“Industrial quality eye protective devices,” as used in this section, means devices meeting the standards of the United States of America standard practice for occupational and educational eye and face protection, Z87.1-1968, promulgated by the American National Standards Institute, Inc.

The provisions of this section shall apply to industrial quality eye protective devices purchased or otherwise obtained for use after the effective date of this act, and shall not have retroactive application to disqualify any such device in use on or before the effective date of this act.

History: L. 1967, ch. 408, § 1; L. 1978, ch. 290, § 1; July 1.

**Kansas Department of Health and Environment
Permanent Administrative Regulations
Infant and Toddler Program**

28-4-550. Definitions.

- (r) “Screening” means a brief procedure administered by qualified personnel to identify a child who needs an evaluation. The five developmental domains to screen are the following:
- (1) Cognitive development
 - (2) Physical development, including health and nutrition, motor, **vision**, and hearing
 - (3) Communication development
 - (4) Social or emotional development
 - (5) Adaptive development.

28-4-551. Screening activities.

- (a) Families may choose to have their child evaluated, rather than screened.
- (b) Certain conditions, such as Down Syndrome, indicate the need for evaluation rather than screening.
- (c) Screening shall be available at least monthly.
- (d) Screening may be conducted in places where a child may be found in the course of regular activities, such as a home, child care center, or physician’s office, or at community locations, such as health department, school, or developmental center.
- (e) Written parental consent shall be required before screening.
- (f) Screening shall be conducted by a qualified person or by a qualified multidisciplinary team.
- (g) Screening shall include the five developmental domains.
- (h) Screening shall result in one of three possible outcomes:
- (1) “Pass,” which means that no concerns were identified and the child is developing within normal limits.
 - (2) “Questionable,” which means that the results of the screening process were such that a rescreening is needed within a specified time.
 - (3) “Refer,” which means that concerns were identified and a referral for evaluation shall be made within two working days.

More information about Kansas Part C Infant-Toddler regulations, policies and monitoring standards can be obtained by contacting KDHE Infant-Toddler Services, 785-296-6135 or by calling the Make-A-Difference Information Network, 800-332-6262 (V/TDD).

QUALIFICATIONS OF VISION SCREENERS

The Kansas Department of Health and Environment (KDHE), Bureau for Children, Youth & Families, is the agency which has assumed responsibility for coordination of in-service education, training and periodic updating of information and skills to vision screeners. KDHE assumes the overall responsibility for maintaining quality screening standards. Interagency use of uniform guidelines is a vision screening program goal.

Vision screening shall be provided by qualified persons such as nurses, volunteers or other personnel instructed in proper vision screening methods. The qualified screener will be able to demonstrate the skills necessary to perform the required vision screening tests and all recommended screening tests. The trained screener is able to perform screening tests for all child and adolescent health programs, including infant-toddler (Part C), child and adolescent school vision screens and general well child health assessments. Training is available through the Area Health Education Centers in Kansas as well as select professional health conferences. For training dates contact:

Mary Beth Warren, RN, MS, CPHQ
Area Health Education Center
Pittsburg, KS 66762-0296
Telephone: (620)235-4040
Fax: (620)235-4041
Email: mwarren@mail.pittstate.edu

In Infant-Toddler Part C networks, the individuals providing vision screening for the birth to three years population are required to be trained in vision screening tests and procedures. Trained screeners will be responsible for making referrals based on screening results and the referral criteria stated in this manual. With assistance from a network's Family Services Coordinator(s), screeners will also coordinate follow-up for individual children to access needed services.

The overall supervision of school and health department vision screening programs should be provided by a registered nurse who will utilize professional judgment and direct the application of screening results to referral criteria, and coordinate follow-up for individual children and adolescents to access services needed.

Screening by a qualified physician, ophthalmologist or optometrist is usually not done in an Infant-Toddler Part C, public health or school setting. These vision specialists serve as referral sources to vision service access and as screening consultation support. Screening should not be interpreted as a complete eye examination.

PARENT/GUARDIAN CONSENT/REFUSAL FOR SCREENING

A parent or guardian has the right to refuse screening on children under his/her legal custody. A written, signed statement from the parent/guardian indicating refusal is recommended for school screenings.

The Vision Screening Task Force recommends that school districts inform parents of the vision screening process prior to its occurrence in the school. This information can be provided through the school newsletter, local newspaper or other media, and/or a letter to each student's family. Providing information about an upcoming school-screening program prior to its occurrence gives parents the opportunity to decide whether or not to allow the test to be performed on their children. A form denying permission for vision screening should be included with the letter of explanation of the procedure. If the form is not returned with the parent's or guardian's signature to the school by a designated time, stating the child should not be screened, the child will automatically be screened.

Written, signed parental consent is required for Infant-Toddler Part C screenings. [K.A.R. 28-4-551 (e)]

In the case of provision of EPSDT and well child clinics, vision screening is a portion of the required screening services; thus, the waiver of screening does not apply.

REFERRAL AND FOLLOW-UP

It is important to keep in mind that vision screening is only the first step in identifying those who need a more thorough examination by an ophthalmologist or an optometrist. While this first step is extremely important, it is of limited value unless those who do not pass the screening are followed to ensure that an examination is done and subsequent examination recommendations are followed. A sample form, "Reporting of Vision Screening for Referral to Ophthalmologist or Optometrist" can be found in the Appendix. The form can be used to report a "did not pass" screening. Procuring a professional examination for a child from an ophthalmologist or optometrist is the responsibility of the parent(s) or lawful custodian. Vision screening personnel, with administrative support, should follow up on every vision screening referral to address any barriers to care and assure every child's access to vision service care. Refusal of the parent(s) to take a child for a professional eye examination should be recorded, after verification, on the child's health record. A written statement from the parent(s)/guardian(s) indicating refusal for professional intervention should be included on the child's health record. A sample letter for obtaining feedback on vision referrals is also included in the Appendix. If concluding that the child is in need of care when the parents fail to obtain the needed vision examination, the local agency that provided the vision screening services may apply to a court of competent jurisdiction for an order directing appropriate action. Completion of the vision referral with a professional eye examination or determination of the parent(s)/guardian(s) refusal to secure the examination for their child should occur within one month after the original referral notification is made to the parent(s)/guardian(s).

When vision cannot be corrected to better than 20/70 in either or both eyes, the child should be referred for a school system special education or Part C Infant-Toddler developmental evaluation. Special assistance in either of these settings, with appropriate accommodations for the child's learning, may be warranted.

KAN Be Healthy (EPSDT) VISION SCREENING GUIDELINES

The KAN Be Healthy is a provision of Title XIX of the Social Security Act administered under Centers for Medicare & Medicaid Services (CMS). This program ensures the provision of health care services to prevent and detect health problems for children and adolescents under age 21. Through the Kansas Medicaid program, the KAN Be Healthy Early Periodic Screening, Diagnostic and Treatment (EPSDT) services are to be provided to all children who are eligible for Medicaid and whose families want these services. Children and youth who are eligible for Medicaid should participate in the KAN Be Healthy EPSDT program and receive health checks according to its periodicity schedule.

The periodicity schedule for this program falls within the minimal requirement set by Kansas law for each school board to provide basic vision screening to every pupil enrolled in each school "not less than once every two (2) years". **K.S.A. 72-5205 (a)** states that, "The requirements shall not apply to a pupil who has had a basic vision screening examination within six months prior to the provision of basic vision screening in the school in which the pupil is enrolled."

Vision screening is one of the included components of a KAN Be Healthy EPSDT health assessment. The EPSDT vision screening includes: eye tracking evaluation, at each visit, for children under age 3; distance acuity testing using a standardized eye chart for children over age 3; and referral to ophthalmologist or optometrist as indicated. The KAN Be Healthy EPSDT trained nurse, advanced registered nurse practitioner (ARNP), physician assistant (PA), and physicians are to follow the vision screening standards and protocols as described in these guidelines. **Vision services** include diagnosis and treatment for defects in vision, including the provision of eyeglasses. Vision services must be provided according to a distinct periodicity schedule developed by the state and at other intervals as medically necessary.

COLLABORATION OF SYSTEMS

Collaboration with local primary care providers who work with children within existing systems of health care already receiving health screenings is essential to prevent duplication and replication of health screenings and lessen fragmentation of health care for children and adolescents enrolled in those care systems. Likewise, primary care providers within systems of care need assistance with outreach and access to children of families enrolled in their programs to promote utilization of the services offered through their system of care.

School district health staff and Infant-Toddler Part C staff should focus efforts in creating linkages to and supporting existing systems of care and services within each community. Local partnerships can create effective systems, thereby assuring that school boards fulfill statutory screening mandates, that Infant-Toddler Part C regulatory screening requirements are met, and that those systems of care function more effectively. Children thrive and flourish within cooperative communities where articulated systems result from collaborative efforts.

Children who are already being screened and followed within a system of care need not be re-screened. However, the school system and Part C Infant-Toddler are burdened with the duty of assurance that vision screening is completed according to the law. A system for communicating vision screening results to school personnel and Part C personnel must be mutually agreed upon by the agencies in the community serving children and adolescents within Health Insurance Portability and Accountability Act (HIPAA) compliance of those collaborating entities.

All agencies must guard any individually identifiable health information as confidential and only transfer information following informed, signed permission to do so from the parent or guardian or, in the school system, under the pact of an interagency agreement which existence is also communicated to the parent or guardian.

VISION SCREENING FOR INFANTS AND YOUNG CHILDREN

A number of developmental delays and lifelong disabilities can occur as a result of failure to detect vision problems early in a child's life. Very young children may not report difficulties with vision because they do not know how they are meant to see. Thus, vision screening is undertaken as early as possible to identify children with possible refractive errors (myopia, hyperopia, and astigmatism), muscle imbalance, and other gross abnormalities of the vision system.

Serious visual impairment can often be prevented when problems such as refractive errors and muscle imbalance are detected and corrected during the critical periods of early childhood. For example, amblyopia has a better prognosis if detected and treated prior to age three. Referral of children with suspected amblyopia for a professional eye examination is recommended as soon as possible. Similarly, strabismus is best treated when detection and treatment occur before age three.

A child of any age who does not cooperate during the vision screening should be rescheduled for screening within two weeks. Referral criteria for the vision screening tests are described in the Guidelines and should be followed. **If the young child is unresponsive to vision screening, or if the screener or caregiver has any concerns about the young child's vision, referral should be made for a professional eye examination (a qualified physician, ophthalmologist or optometrist). Re-screening in this situation is not necessary.**

Birth to Age Three

Vision screening is to be included in any infant-toddler screening program. Vision screening for children birth to age three includes: vision history with a review of risk factors for vision problems; appearance, behaviors and concerns related to the eyes and vision; and specific vision tests selected as a function of age. (See Matrix in these Guidelines, page 13.) A number of vision screening tests can be administered to nonverbal individuals such as infants, toddlers, and older children experiencing delayed language development. These children should be screened annually. Early detection and appropriate intervention are critical to a child's ability to learn.

Ages 3 to 5

Children ages 3-5 years should be screened with the same tests as those used for 5-7 year old children with the exception of near acuity, and the plus lens test for excessive hyperopia. (See Matrix in these Guidelines, page 13.) Tests recommended for the younger ages (birth – 3 years) should also be administered if the 3-5 year old has never previously been screened for vision or if the 3-5 year old child is unable to respond to age appropriate tests.

Ages 3 to 8

Children ages 3 to 8, who are officially enrolled in a school program, should be screened annually. Early detection and appropriate intervention are critical to a child's ability to learn.

SCREENING OF CHILDREN AND YOUTH WITH DISABILITIES



The importance of vision screening for children and youth with disabilities cannot be overemphasized. Vision plays a major role in developmental, special education and vocational training programs for these individuals. Since special education services in Kansas are often provided by special education cooperatives, there is occasional confusion as to who should screen individuals receiving special education. Screeners in regular education programs should not assume that the special education students are being screened by the cooperative, and vice versa. Individuals with disabilities are entitled to the same services of vision screening, referral and treatment, as their peers without disabilities. Precautions should be taken to ensure that they are not overlooked.

For those individuals whose mental and/or physical disabilities prevent them from performing standard screening tests, the recommended alternative screening tests should be used. Individuals who are unable to perform on any acuity tests should be referred for a professional eye examination. Once the individual is under the care of a qualified physician, ophthalmologist or optometrist, parents or caregivers should be encouraged to adhere to the schedule of return visits recommended by the eye care specialist. In subsequent years, screening should be attempted and any changes in vision status should be reported to the individual's parent/care giver for forwarding to the child's/youth's eye care specialist.

Children with special needs have a higher percentage of vision problems for refractive errors, eye muscle problems and cataracts, than the general population. The same individuals who are difficult-to-test will probably be difficult-to-examine when referred for professional eye care. Screeners may need to assist the parents in locating a qualified physician, ophthalmologist or optometrist who is willing to examine patients with disabilities. Additionally, screeners can provide suggestions to teachers, parents and other caregivers to prepare children and youth with disabilities for an upcoming eye examination. The screener may also need to provide additional follow-up services for these individuals such as training programs for the wearing and care of glasses. Finally, the optometrist or ophthalmologist may need to explain the results of an eye examination to teachers, parents, and other caregivers so that they can better plan for the developmental and educational needs of individuals with disabilities.

KAN Be Healthy (EPSDT) providers should include vision screening for children and youth with disabilities according to the EPSDT periodicity schedule.

VISION SCREENING MATRIX

See Pages in Guide	Vision Screening Test	Birth to 6 months	6-18 months	18 months to 3 years	3 to 5 years	5 to 8 years	8 to 21 years
15	Eye Lid Reflex	P					
16	Fixation	P	r	r	r		
17, 18	Risk Factors (checklist)	P	P	P	*	*	*
19	Tracking	P	P	P	r	r	
20	Pupil Response	P	P	P	r	r	r
21	Teller Acuity Cards	O	O	O			
22	Photo Refractor OR 		O	O	O		
23, 24	Corneal Light Reflex 	P	P	P	P	P	
25, 26	ABC's of Vision (checklist)	P	P	P	P	P	P
27	Cover-Uncover Test		P	P	P	r	r
28	Near Point of Convergence		P	P	P	P	r
29	Fusion Test (Worth 4-Dot)			P	P	P	
30, 31	Perception of Depth (Stereopsis) (Titmus Fly or Random Dot E)			P (Use R.D.E. for 30 mos.)	P	P and older)	*
36, 37, 38	Distance (Snellen, E Chart, or HOTV)			P (HOTV or Teller)	X	X	X
39	Color Vision				P	P	*
40	Plus Lens					P	P
41	Near Acuity					P	P

P = Priority for designated age group

X = Required by law in school setting

O = Priority screening test **if equipment is available and screener is appropriately trained to use the equipment.**

* = If there are NO vision screening records, these screening tests should be administered and information obtained

r = Recommend if concern is present

NOTE: If unable to respond on age level tests, administer recommended tests for lower ages.

GENERAL PREPARATIONS FOR SCREENING INFANTS AND TODDLERS

Recent advances in infant vision assessment have made it possible to screen for vision problems from birth, thus allowing for much earlier detection of vision problems than in the past (e.g., Teller Acuity Cards, photo refractor). This early detection, if followed by appropriate referral and treatment, can have a significant impact on a child's development, school achievement, and overall quality of life.

The use of a functioning vision system for birth to age 3 is inherent for successful age appropriate completion of some of the tasks included in developmental screening tests such as the Denver II. A pattern of “fail” or caution items should alert the examiner to complete a more thorough review of the child’s vision.

Timing is a critical factor in screening the vision of very young children. Whenever possible, schedule the screening to occur at a time of day when the infant or toddler is typically awake and alert. Ask the parent/caregiver to bring a favorite toy, teething ring, pacifier, or other items that seem to quiet the child. During the screening the child should be kept as comfortable as possible, giving consideration to room temperature relative to the clothing worn, state of hunger, and position of the child.

Some children are quite visually attentive while drinking from a bottle or eating a cracker. Infants who lack head and neck control should be positioned so that their head and body are stabilized, either held by a parent/caregiver, or lying in an infant carrier. Most infants and toddlers are more visually attentive when positioned at least partially upright. Older infants and toddlers can be seated on the lap of a parent/caregiver. The child must feel secure in order to attend to the screening procedures.

The screener may find it helpful to use auditory cues (speech, noise making toys, etc.) to attract the child's attention to the vision task. However, the sound cues must be eliminated during the actual testing to be certain that the child is using vision, rather than auditory input, to respond during the test. The screener may also find it helpful to test the eyes in a specific sequence (e.g., right eye then left eye, then both eyes). Some equipment needed for testing includes a penlight, occluder and a small toy less than two inches in size.

EXAMPLES OF TASKS ON DENVER II THAT REQUIRE VISION FOR SUCCESSFUL COMPLETION:

Regard own hand.

Work for toy.

Follow to midline.

Look for yarn.

Tower of cubes.

Any imitation activities that use visual cue only.

EYE LID REFLEX

Ages: Birth to six months - priority

Purpose: To determine the presence or absence of the protective blink reflex.

Equipment: Form for documentation.

Procedure: If necessary, child is held by a second adult so that head is in an upright position and supported. The tester's hand is positioned 5" to 6" above the child's eye level and slightly in front of the child's face; the palm of the hand should be parallel to the front surface of the eyes.

The tester should rapidly lower the hand so that it passes directly in front of the child's face. Observe for the blink response immediately after the hand is lowered.

Pass: Child blinks in response to lowered hand.

Fail: Child does not blink in response to lowered hand after two opportunities to do so.

FIXATION

- Ages:** Birth to six months – priority
Six months to five years - recommended
- Purpose:** To determine the presence of a visual orienting response.
- Equipment:** Small colorful object, no larger than 2" and not noisy (e.g. finger puppet).
Form for documentation.
- Procedure:** Tester is positioned facing the child at child's eye level. Present the object approximately 12" in front of child's nose at eye level and observe child's eyes. Both eyes should be directed toward the object for at least two (2) seconds. Use of initial noise to get attention is acceptable but do not provide continuous sound stimulation.
- Pass:** Child fixes on object with both eyes for at least 2 seconds.
- Fail:** Child does not fixate on object, or fixates with one eye only. Any eye drifting is abnormal.

RISK FACTORS

- Ages:** Birth to three years - priority
Three to twenty-one years – priority if there is no vision screening record for a child
- Purpose:** To determine the existence of conditions which are associated with a higher probability of vision impairment.
- Description:** There are specific conditions associated with a higher probability of, or risk for, vision impairment. The presence of any of these high risk factors can be noted when you initially obtain the client's history, or when you update the client's history. The presence of a risk factor should alert you to an increased possibility of vision impairment.
- Procedure:** When obtaining the client's history, inquire about the presence of each of the vision risk factors on the Checklist (page 18). When updating the case history you need only to inquire about the presence of new conditions (disease), newly expressed concerns by the client or caregiver regarding eyes/vision and overall developmental skills, and instances of head trauma since the previous history update.
- Pass:** When there are no risk factors present, proceed with the remainder of your vision screening protocol.
- When there is a risk factor present and the results of the remainder of your vision screening protocol indicate no vision problem is apparent, then vision screening on a regular schedule is recommended.
- Fail:** When there is a risk factor present and the results of the remainder of your vision screening protocol indicate apparent vision problems, or when the results are inconclusive, or when you have any question about the client's vision, referral to an ophthalmologist or optometrist is recommended.

RISK FACTORS -- Checklist

- ☐ PREMATURE BIRTH (4 weeks or more)
- ☐ IN A NEONATAL INTENSIVE CARE UNIT FOR GREATER THAN FOUR DAYS, PLUS OXYGEN
- ☐ VERY LOW BIRTH WEIGHT [<1500 GRAMS (3.3 lbs.)]
- ☐ BIRTH DEFECTS INVOLVING THE HEAD OR FACE
- ☐ FAMILY HISTORY OF CHILDHOOD VISION IMPAIRMENT (e.g., Amblyopia, severe refractive error, strabismus or any visual perceptual problems)
- ☐ SUSPECTED OF HAVING A CONGENITAL INFECTION (e.g., CMV, Toxoplasmosis, Maternal Venereal Conditions, Rubella)
- ☐ A CONDITION (e.g., disease, syndrome) WHICH IS ASSOCIATED WITH VISION PROBLEMS (e.g., Down Syndrome, cerebral palsy, hearing impairment, Diabetes, Juvenile Rheumatoid Arthritis, hydrocephalus, retinoblastoma)
- ☐ CONGENITAL DEAFNESS (e.g., Usher Syndrome)
- ☐ PARENT, CHILD OR CAREGIVER HAS CONCERNS ABOUT THEIR VISION
- ☐ HEAD TRAUMA (e.g., Shaken Baby Syndrome)
- ☐ BRAIN TUMOR
- ☐ CHEMICAL EXPOSURE (e.g., lead poisoning, drugs during pregnancy, Fetal Alcohol Syndrome)

TRACKING

Ages: Birth to three years – priority
Three years to eight years - recommended

Purpose: To observe ocular-motor development.

Equipment: Small, brightly colored object, no larger than 2" and free of noise.
Form for documentation.

Procedure: Screen with glasses on if child wears them.

Tester sits facing the child at child's eye level. Present the object approximately 12" in front of child's nose at eye level. When child has fixated on the object, move the object slowly to the right along the horizontal plane 6" to 8" (taking 2-3 seconds to cover the distance), then slowly move the object back to the central starting point. **Stabilize child's head if child does not naturally follow with eyes only.** Repeat procedure, moving object slowly to the left and back to the starting point.

Pass: Smooth, continuous movement with the eyes remaining in symmetrical alignment.

Fail: Tracking with one eye only or one or both eyes fail to maintain gaze at object.

NOTE: Infants below three months old may track with less than mature levels of smooth, coordinated movement. Refer only those with markedly poor performance on this procedure.

PUPIL RESPONSE

- Ages:** Birth to three years – priority
Three to twenty-one years - recommended
- Purpose:** To determine the presence or absence of the pupillary reflex to a light source.
- Equipment:** Penlight.
Form for documentation.
- Procedure:** In a room with dim lighting, position the child so that s/he is not facing a window or other light source. Hold penlight 4" to 6" in front of right eye. Turn penlight on for 2 to 3 seconds while observing the right eye for pupil constriction. Turn penlight off and watch for pupil dilation. Wait 5 to 10 seconds; repeat the procedure for the left eye.
- Pass:** Each eye shows rapid, smooth constriction of the pupil when stimulated by the light, followed by smooth dilation in the absence of the light.
- Fail:** Either pupil fails to react to the light source, or reaction (constriction) is sluggish, jerky, or asymmetrical.
- NOTE:** Certain medications affect the pupillary reflex and could account for an abnormal pupil response to light. Regardless, abnormal pupillary reflex should be referred whenever observed, since this may suggest a neurological abnormality.

TELLER ACUITY CARDS

Ages: Birth to three years – priority, **if equipment is available and tester has been trained appropriately in their use**; can also be used with older individuals who are unable to make the responses required by other acuity tests.

Purpose: To determine visual acuity.

Description: Visual acuity is determined by the smallest size grating on which the individual will fixate when viewed at a prescribed distance.

Equipment: Set (or age appropriate half-set) of Teller Acuity Cards
Be sure the cards are blemish free
Occluder
Form for documentation.

Procedure: Screen with glasses on if child wears glasses.

The screener wishing to use the Teller Acuity Cards should carefully study the handbook which accompanies the cards and attend a special training session to learn the procedures*. Various cards are placed in front of the individual at one of three test distances, depending on the individual's age. Each card has a black-and-white vertical grating on one side of the front surface of the card. The screener views the individual's eye(s) through an aperture in the center of the card and judges whether the individual fixates on the grating. Acuity is determined by the smallest grating seen by the individual. Testing is done with both eyes and with each eye separately.

Pass/Fail: Use referral criteria specified in the Teller Acuity Card Handbook. Norms have been developed for newborns and for children 1, 2, 4, 6, 9, 12, 18, 24, 30, and 36 months old.

* Training is required for those using this tool for vision screening in an Infant-Toddler Part C network or sponsored event.

PHOTO REFRACTOR / PHOTOSCREENER™

Ages: Six months to five years or when a child has severe disabilities and is unable to make the responses required by other acuity tests – priority, **if equipment is available and tester has been trained appropriately in its use.**

Purpose: To screen for nearsightedness, farsightedness, astigmatism, in addition to strabismus (misaligned or crossed eyes).

Description: The Photoscreener™ is a camera that takes instant pictures of a patient's eyes. The photographic process produces bright crescents on the film if a problem is present.

Equipment: Photoscreener™ loaded with film.
Form for documentation.

Facilities: Have the room dimly lit. The sensitivity is dependant on pupil size. Make sure the room is light enough that you can see the subject's face, but dim enough to allow the pupils to naturally dilate.

Procedure: The operator aligns two illuminated arrows from the Photoscreener™ on the child's forehead. When the arrows are correctly aligned, the operator simply pushes a button, which automatically takes a picture.

The screener wishing to use the Photoscreener™ shall carefully study the accompanying handbook and attend a special training session in the use of the Photoscreener™.

Pass/Refer: An optometrist or ophthalmologist, working with the screener, will determine “pass” or “refer”.

NOTE: If a family wants to know the results of their child’s screening, the screener should provide them to the family with the explanation that they are preliminary results. An optometrist/ophthalmologist will also review the photos in order to assure accuracy of interpretation and to prevent over-referral.

If the Kansas Vision Screening Guidelines indicate a “refer” result, and the Photoscreener™ indicates a “pass” result, the child should be referred in accordance with the Kansas Vision Screening Guidelines.

CORNEAL LIGHT REFLECTION (HIRSCHBERG)

Ages: Birth to eight years - priority

Purpose: To detect constant eye deviation. (strabismus)

Description: By noting the similarity or dissimilarity in the position of light being reflected in the pupils, the observer is able to detect a constant eye deviation of a lesser degree than possible when observing the eyes.

Equipment: Penlight.
Form for documentation.

Facilities: Normal or lower light level. Minimum number of light sources (windows, overhead lights, etc.).

Procedures: Screen with glasses on, if individual being screened wears glasses.

Position the individual so that the penlight and the screener's line of vision are at midline in front of the child's eyes at a distance of 14 – 18 inches. The child must be looking straight at the screener. Holding the penlight horizontally, direct the light at the bridge of the child's nose. Observe the pupils and check the position of the light reflection in each eye.

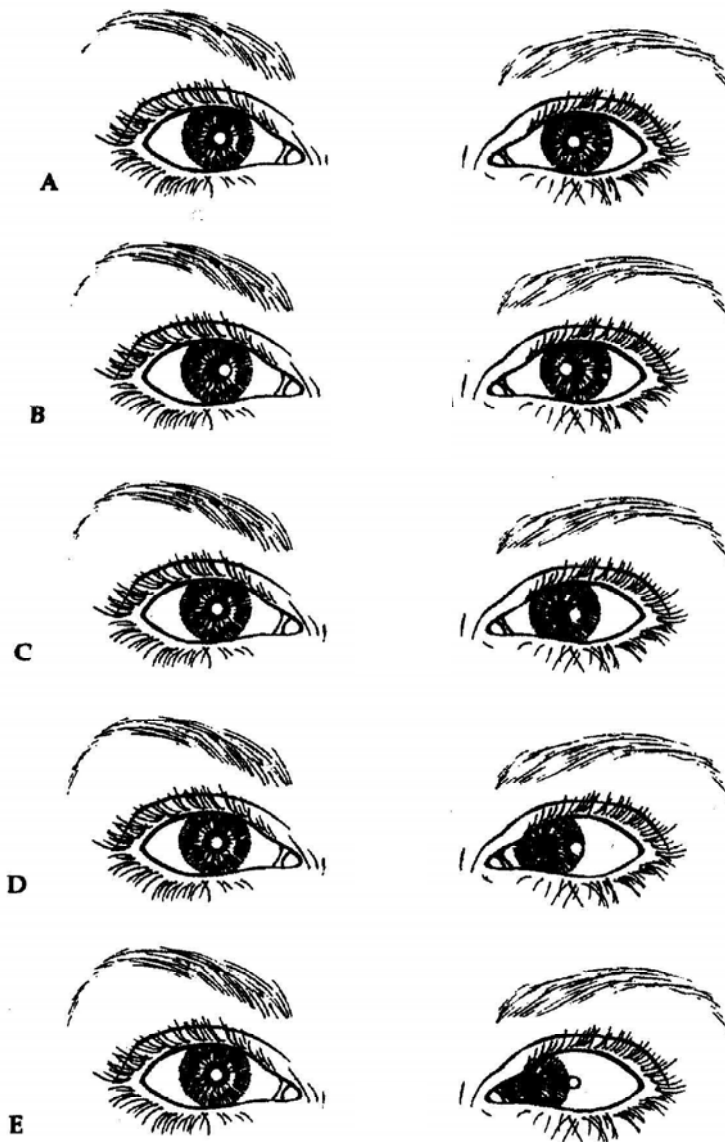
Pass: The reflection of the light appears to be in a similar position in the pupil of each eye. See Figure A in the accompanying illustration for an example of normal light reflections.

Fail: The reflection of the light does not appear to be in a similar position in the pupil of each eye. See Figures B, C, D and E in the accompanying illustration for examples of abnormal light reflections.

NOTE: The shape of the eye opening depends on racial characteristics. Since alignment of the eyes is noted by a centered pupillary light reflex, the shape of the eye opening should have no influence on test results.

Essentially all babies have a flat bridge of the nose. This results in less scleral show (white of the eyes). Hence, normally aligned eyes may appear turned in if the examiner attends to the scleral show and not the corneal light reflex.

DIAGRAM OF HIRSCHBERG TEST



The position of the light reflection on the cornea or pupil may be used to detect strabismus.

- (A) Reflection falls slightly nasal in each eye (normal).
- (B) Characteristic asymmetry of the light reflection in wall-eyed strabismus (exotropia).
- (C) Characteristic asymmetry of the light reflection in cross-eyed strabismus (esotropia).
- (D) Characteristic asymmetry of the light reflection in cross-eyed strabismus (esotropia).
- (E) Characteristic asymmetry of the light reflection in cross-eyed strabismus (esotropia).

ABC'S OF VISION

Ages: All ages - priority

Purpose: To ensure that the eyes are in good health by observing the appearance of the eyes and eliciting information regarding behaviors and complaints concerning functional use of the eyes.

Description: Conditions affecting the health of the eye can cause vision problems and, if unattended, can lead to eye damage; behaviors and complaints can indicate the presence of vision problems.

Procedure: See accompanying checklist, "The ABC's of Vision Difficulty" (page 26). Through visual inspection of the child's eyes, note whether any of the "Appearance" conditions are present. Caregiver, teacher, and other service provider reports should be elicited to determine if a history of any of the "ABC's" conditions is present. Request information for age appropriate behaviors only.

Pass: Based on age appropriate behaviors, none of the conditions are present. No referral is recommended.

Fail: Based on age appropriate behaviors, any of the conditions are present. Refer to the child's ophthalmologist or optometrist.

ABC'S OF VISION DIFFICULTY

This list can be used to identify the need for a vision examination and should be shared with the classroom teacher, parents, Infant-Toddler network, or child's physician.

A'S - APPEARANCE OF THE EYES

- Reddened eyes
- Watery eyes
- Encrusted eyelids
- Frequent styes
- Droopy eyelids
- Eyes in constant motion, eyes jerk on fixation
- Eyes crossed- turning in or out at any time (>6mos.)
- Difference in size of eyes

B'S - BEHAVIORS INDICATIVE OF POSSIBLE VISION DIFFICULTY

- Abnormal sensitivity to light
- Rubs eyes frequently
- Blinks excessively or rarely blink
- Stares at bright lights frequently
- Turns head so as to use one eye only to look at object in front of child
- Brings objects up to one eye rather than both eyes to view it
- Covers or closes one eye frequently
- Tilts head to one side when looking at object in front of child (>6 months)
- Exhibits poor eye-hand coordination (> 6 months)
- Doesn't appear interested in looking at toys or faces (< 6 months)
- Doesn't respond to visual toys but is responsive to toys with sound (3 to 12 months)
- Stares at own hand or an object and/or moves own hand or object in front of the eyes frequently (>12 months)
- Places an object within a few inches from the eyes to look at it (>18 months)
- Thrusts head forward or backward while looking at distant objects
- Squints, frowns or scowls when looking at objects (or reading)
- Have academic difficulties
- Avoids close work
- Exhibits short attention span
- Exhibits "acting out" or "class clown" behavior
- Daydreams
- Dislikes tasks requiring sustained visual concentration
- Exhibits nervousness, irritability or restlessness after maintaining visual concentration
- Exhibits unusual fatigue after completing a vision task
- Places head close to book or desk when reading or writing
- Loses place while reading
- Uses finger to keep place while reading
- Says aloud or mouths the words while reading
- Moves head rather than eyes while reading
- Exhibits difficulty remembering what is read
- Persistent letter reversals after the second grade
- Confuses similar words when reading
- Confuses the following letters when reading or spelling: o and a; h and n; e and c; n and m; f and t.
- Exhibits unusual awkwardness

C'S - COMPLAINTS ASSOCIATED WITH USING THE EYES

- Headaches
- Nausea and/or dizziness
- Eyes hurt
- Burning, itching, or tearing of eyes
- Blurring or double vision

COVER-UNCOVER TEST

- Ages:** Six months to five years – priority
Six years to twenty-one years -- recommended
- Purpose:** To detect children whose eyes have a tendency to move out of alignment when one eye is covered.
- Equipment:** Small colorful object, no larger than 2" and not noisy.
Form for documentation.
Occluder.
- Procedure:** Tester is positioned facing the child at child's eye level. Hold the object 12 inches away from the child's bridge of nose and at eye level with your left hand.
- Observe the child for fixation on the object. While the child is fixated on the object, cover the left eye with occluder for at least 3 seconds.
- Watch the eye that is not covered for any movement. If fixation is lost, attempt to reestablish fixation by removing occluder. Attempt to cover the left eye again.
- Fixation must be kept on the object for 3 seconds. Remove occluder and watch for any movement of the eye that was just uncovered. The left eye should remain in alignment with the eye that was not covered.
- Switch the object to your other hand. Establish fixation and cover the child's right eye with an occluder. Maintain fixation on the object for 3 seconds. Remove occluder and watch for any movement of the eye that was just uncovered.
- Pass:** Child maintains fixation on the object while an eye is covered. No movement of the eyes was detected.
- Fail:** Child does not maintain fixation with both eyes when either eye is covered or uncovered. Movement of only one eye is detected. One or both eyes "float" in or out.

NEAR POINT OF CONVERGENCE

Ages: Six months to eight years – priority
Eight to twenty-one years - recommended

Purpose: To test for convergence of eyes while focusing on a nearby object.

Equipment: Target object (e.g., small toy; penlight; other small object)
Form for documentation.

Procedure: Screen with glasses on if individual wears them.

Seat individual in front of the screener. Hold a small object approximately 12" in front of the individual's face at eye level. Direct the individual's attention so eyes fixate on the small object. Move target object slowly at individual's eye level on midline toward the bridge of the individual's nose. Observe how both eyes follow the target object.

Pass: Eyes converge and pupils constrict to focus on moving object and eyes have a symmetrical response until object is within 3" from the bridge of the nose.

Fail: Poor fixation or asymmetrical response of eyes to the moving object beyond 3" from the bridge of the nose, or eyes do not converge to 3" from bridge of nose.

WORTH 4-DOT TEST (FUSION)

Ages: Eighteen months to eight years - priority

Purpose: To detect suppression of one eye.

Equipment: Special flashlight with vinyl disc containing 4 dots
Red-green goggles
Form for documentation.

Procedure: Screen with glasses on if child wears them.

Child wears red-green goggles, with the red lens in front of the right eye. Tester holds special flashlight with disc in front of child's face at a distance of approximately 12"; **flashlight is held with the red dot at top**. Tester turns on flashlight. Child should have both eyes open while testing. Depending on age and abilities of the child, two options for administering are:

- 1) For children with counting skills: ask them how many dots they see.
- 2) For children who don't count: ask them to touch or point to all the dots.

Pass: Child counts, touches or points to four (4) dots.

Fail: Child counts, touches, or points to two (2), three (3), or five (5) dots. An individual who sees 2 dots may be suppressing the left eye. An individual who sees 3 dots may be suppressing the right eye. An individual who sees 5 dots may be experiencing diplopia, or double vision.

PERCEPTION OF DEPTH (STEREOPSIS)
TITMUS FLY*

- Ages:** Eighteen months to eight years - priority
- Purpose:** To determine the presence or absence of stereopsis or visual perception of three-dimensional space (binocular vision).
- Description:** The child tries to "pinch" the tip of a wing between the thumb and forefinger.
- Equipment:** Polaroid glasses
Titmus Fly test book
Form for documentation.
- Procedure:** Screen with glasses on if individual wears them.
- Place Polaroid glasses in front of child's eyes. Hold Titmus Fly test book at normal reading distance of 13-16" and **at a 45° angle** in front of child. Do not lay test book flat. Ask child to pinch the fly's wing tips. Do not demonstrate with test booklet.
- Pass:** Fingers remain above the plane of the book surface.
- Fail:** If individual consistently touches the book surface when trying to pinch the wing tips, the child should be rescreened. Refer if individual fails rescreening test.
- Screening special populations:** Other tests that utilize different targets, such as a reindeer or butterfly, are available for young children who are afraid of the fly. Young children may respond to "pick up" rather than pinch.

* There are other Stereopsis tests similar to the Titmus Fly that can be used instead of the T.F., e.g., the Stereo Butterfly and the Stereo Reindeer.

PERCEPTION OF DEPTH (STEREOPSIS)
RANDOM DOT E

- Ages:** Thirty months and older - priority
- Purpose:** The specially designed cards and glasses test the child's stereoscopic vision. The absence of stereoscopic vision may suggest amblyopia or other significant vision problems.
- Equipment:** The Random Dot E kit includes polarized glasses, a model E card, a raised E card, and a stereo blank card.
- Procedure:** Select a room that is quiet and well lit. Arrange the setting so you can present the cards at a distance of 20 inches and 40 inches from the child. Check the cards from the child's position to ensure that no distracting reflection appears on the cards.
- With the polarized glasses on, have the child examine the Model E card visually and tactilely. Emphasize that the E “sticks out” on the Model E card. Move to a position where the cards can be presented 20 inches away from the child's eyes. Shuffle the cards behind your back and then present the cards. Take care to present the cards correctly. The word "Raised" should be at the top of the card. Ask the child to point at the E that sticks out. Shuffle the cards again and present them again until the child correctly identifies the raised E card four consecutive times out of no more than eight trials. Move back to where the cards can be presented 40 inches away from the child's eyes. Repeat the procedure of shuffling and presenting the cards until the child responds correctly four times in a row within eight trials.
- Pass:** The child identifies the Raised E card four times out of six attempts.
- Fail:** The child is unable to identify the Raised E card correctly four out of six attempts.

GENERAL CONSIDERATIONS FOR ACUITY TESTING

Vision screening is not diagnostic. Children who fail the initial screening test and the rescreening test must be referred to an eye specialist for a diagnostic examination. Screening will not identify every child who needs eye care, nor will every child who is referred require treatment. The criteria for referral have been set to keep both the over-referrals (those with no problem on examination) and the under-referrals (those who are missed) at a minimum.

A screening for ***distance visual acuity*** is considered by authorities to be *the most important single test* of visual ability. This test will identify more children who require eye care than any other single test. Screening for distance visual acuity has proven reliable in detecting such vision problems as amblyopia (lazy eye), myopia (nearsightedness), hyperopia (farsightedness), astigmatism (curvature defects of the eye's surface causing distorted images), and other conditions, such as cataracts, which cause decreased visual acuity. Screening for ***near visual acuity*** has proved reliable in detecting reading difficulties and other problems associated with close work.

Early detection and treatment is vital in children with such eye problems. Both amblyopia and strabismus can cause a child to visually ignore one eye and rely on the other. The ignored eye becomes inefficient through lack of use. If the condition is not treated before the age of six or seven (ideally should be detected and treated before age 3), permanent vision impairment in the unused eye can result. Poor vision also can affect learning ability and the entire adjustment to school.

I. Setting up the Screening Area

- A. A quiet area free from distractions should be selected for the screening. The area should be large enough to allow a 20-foot lane with no obstructions between the individual and the chart. If it is not possible to obtain this distance, a 10-foot child-to-chart distance can be used with a chart specifically designed for 10 feet.
- B. The acuity chart should be positioned so that the 20/30 line is at the approximate eye level of the child/youth to be screened. The chart should be taped against a plain, light background. Avoid using a wall close to windows where glare may be a problem. Also avoid overly bright lights or shadows.
- C. Measure exactly 20 feet from the chart when using a Snellen Chart designed for testing at 20 feet (or 10 feet if 10-foot chart is being used). Tape a horizontal line (masking tape) on the floor at the 20-foot or 10-foot point.
- D. The individual to be tested can either stand or be seated on a chair for the screening. The individual's body should be aligned so that the fronts of both eyes are directly over the masking tape line. When standing, the individual would place the balls of the feet on the line. Footprints or "Magic feet" affixed to the floor are helpful in keeping young children in proper position. (A 9" square of floor tile with footprints outlined on it makes durable "Magic Feet").

If the individual will be seated, place the chair midway over the taped line and ensure the child does not lean forward during the testing.

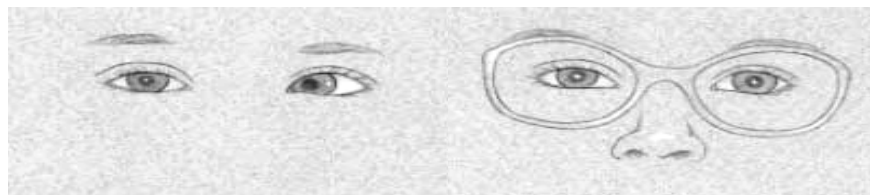
- E. Children waiting to be screened should wait outside the testing room. This prevents a waiting child from memorizing the vision chart letters.

II. Preparing the Child

- A. A short orientation is advisable to acquaint the children with the test materials and to teach them the method of responding.
- B. Children 3 to 5 years old should be taught to play the "E" game. This can be accomplished in small groups of 4 or 5 children. Use the training "E" to introduce the directional concept. The E symbol is usually interpreted as a table and the children are taught to point with their arms or hands in the same direction that the "Table Legs" are pointing. When it is observed that the child understands the "game", s/he is ready for screening.
- C. It is sometimes difficult to screen young children with the Snellen E, because it depends on the child's development of directional sense. The HOTV (or matching symbol) is an alternative test to use with children who have a problem with identifying the E's on the Snellen.

III. Children/Youth Wearing Glasses

- A. Individuals who use prescription glasses or contact lenses for constant wear or distance use should be screened with their corrective lenses on for distance acuity screening. Individuals who use glasses for constant wear or close work (i.e., reading) should be tested for near acuity with lenses on. This should be noted on the vision record (e.g., "20/40 with glasses"). The record for these children should also include the date of last professional eye examination, date of last correction, and date for the next examination.
- B. This information, as well as observations by the caregiver and screener, is important in determining the need for a referral. Sometimes a child under regular care will not be able to pass the screening test, but has the best possible correction. On the other hand, a child who has not seen an eye doctor in over a year may require an examination. The results of the screening will need to be discussed with the parent in order to determine the appropriateness of a referral.



IV. Screening Procedure

- A. Begin with the referral line for child's age, i.e., for 3 year olds show symbols on the 50-foot line, for those age 4 and over, start with the 40-foot line.
- B. Test each eye separately; right eye first, then left, and then both. A standardized routine avoids confusion and facilitates recording.
- C. To test right eye:

- 1. Occlude left eye. Instruct child to keep both eyes open. If screening a young child, the screener should hold occluder (avoid paper squares or 3x5 cards), and avoid touching eye.

Screener can use a soufflé or Dixie cup as occluder. School children can hold their own occluder (paper cup) over eye. A separate occluder should be used for each child and discarded after use.

If a non-disposable occluder is used, it must be cleaned between each use to prevent the possible spread of infection.

- 2. Child is asked to identify symbols in order, moving across the line from left to right starting at the referral line.
- 3. To pass a line, the child must be able to read (correctly identify) one more than half the symbols on the line. This is usually considered evidence that child sees the line satisfactorily.
- 4. If first line is read correctly, proceed to the next smaller line and change direction in which symbols are presented, i.e., move from right to left across this line. Continue presenting each smaller line of symbols through the 20-foot line, as long as the child can identify one more than half the symbols on the line. Change direction with each line presented, i.e., follow a "snake" pattern, to make it more difficult for the child to memorize the responses. If the child can read the 20-foot line correctly, record the visual acuity attained as 20/20.
- 5. If the child fails to read a line, repeat this line in the reverse order. If the line is failed twice, record the visual acuity as the next higher line, e.g., if the child fails on the 30-foot line, record the acuity as 20/40 assuming that one more than half the symbols on this line have been read correctly.
- 6. If the child fails the first line presented, move up the chart to the next larger line of symbols. If this line is failed, continue up the chart until a line of letters is found which the child can read, then try the next line

below. If the child can read the next line of symbols, move down the chart until child fails to read a line correctly twice.

7. If the child has test results of 20/20 for both the right and left eye, it is permissible to start testing both eyes on the 20/20 line instead of starting on the referral line.
8. Visual acuity is recorded as a fraction. The numerator represents the distance away from chart and the denominator the line read. Thus, at a distance of 20 feet if the child was able to read the 20-foot line the visual acuity is 20/20 which is considered normal. If the child could only read the 40-foot line at this same distance, the visual acuity is 20/40.

V. Rescreening

- A. Individuals who fail the initial screening and those who are not testable should be rescreened before a referral is made for a professional eye examination. The rescreening should be about **two weeks** following the initial screening.
- B. Rescreening is particularly important for young children to be sure that their failure or difficulty is not due to temporary factors unrelated to vision. Individuals who fail or are not screenable a second time should be referred.
- C. Certain medical conditions require more frequent screening. If a child is diabetic, a screening is recommended every 6 months. With a diagnosis of Rheumatoid Arthritis, ask their doctor to help determine the frequency of vision screenings that's best for them.

VI. Criteria for Referral

- A. Criteria for referral based on the acuity tests for distance vision are as follow:
 1. 3 year olds - Vision in either eye of 20/50 or poorer (or equivalent measurement). This means the inability to identify correctly one more than half the symbols on the 40-foot line on the chart at a distance of 20 feet.
 2. All other ages - Vision in either eye of 20/40 or poorer (or equivalent measurement). This means the inability to identify correctly one more than half the symbols on the 30-foot line at a distance of 20 feet.
 3. A two-line difference in visual acuity between the eyes in the passing ranges, i.e., 20/20 in one eye and 20/40 in the other.
- B. Samples of referral information can be found in the appendix, pages 52 through 55.

DISTANCE - LETTER OR E CHARTS

Ages: Snellen Letter - children who read alphabet:

E Chart - use with children and youth ages three years and older who are unable to perform on the Letter chart.

If the person being screened does not know the alphabet or cannot perform on the E Chart, use the HOTV test described on page 37.

Purpose: To determine distance visual acuity.

Description: Vision acuity is checked at 10 or 20 feet depending on the chart, with symbols presented in a linear fashion.

Equipment:

Snellen Letter Chart	Measuring Tape	Light Meter
E Chart	Eye occluder	Line occluder for wall chart
Form for documentation	Optional – gooseneck lamp to properly light wall	

Facilities: Room at least 5 feet longer than the test distance and without glare.

Procedure: Refer to page 33 for directions on screening individuals with glasses.

Measure the proper distance from the chart (10 or 20 feet) and mark the testing location with masking tape. Position the individual to stand with the ball of the feet on the marked spot. If seated, child should be centered over the mark and child should not lean forward or sit on end of chair.

Vision is screened in the right eye first, with the left eye occluded. Begin with the 20/40 line. With children suspected of having low vision, start with the largest symbol on the chart. To receive credit for a line the child must correctly read more than half the symbols on that line. It is not necessary to test beyond the 20/20 line. The number recorded as the visual acuity on the screening record is the smallest line on which the individual correctly reads one more than half the symbols.

Next, the left eye is screened with the right eye occluded. Finally, both eyes are screened together. If both eyes separately scored 20/20, you may start on the 20/20 line when testing both eyes together. Move up on the chart if the individual makes errors. The same screening and recording format is followed.

Pass: If the individual's acuity is 20/30 or better for all three scores. (When screening three year olds, 20/40 or better for all three scores).

Fail: If the individual's acuity is 20/40 or worse in one or both eyes (for three year olds, 20/50 or worse), or if there is a two line or more difference between eyes.

HOTV SYMBOLS

- Ages:** Two and one-half to five years and those difficult to test - priority
- Purpose:** To determine distance visual acuity in those who do not know the alphabet or **if there is any question as to response on E Chart.**
- Description:** Visual acuity is checked at a distance of ten feet using the symbols HOTV. The child need not know these symbols, but must be able to match the indicated symbols on a wall chart with those on the response card. The HOTV letters are recognized as easily as a square, triangle or other symbol. These letters also can't be reversed.
- Equipment:** 10' HOTV Vision Chart Student response card Flash cards
Table and chair Form for documentation. Occluder
- Facilities:** Room at least 15 feet long, well lighted, and without glare.
- Procedure:** Refer to page 33 for directions on screening individuals with glasses.

The child should be standing or sitting at a table with the response card in front of him, eyes at a 10-foot distance from the chart. The child should be taught to match symbols by pointing to the same symbol on the response card, as is being pointed to on the chart or shown with a flash card by the screener. Teaching is done by holding the flash cards one at a time near the child and directing the child to match them on the response card. This test procedure can be taught in a minute or two to most children, including nonverbal children.

Begin screening with one person holding an occluder over the child's left eye while another person points to the symbols on the HOTV wall chart. The child should point to the corresponding symbol on his response panel. Start with the referral 10/20 (20/40) or 10/25 (20/50) line and show each of the symbols in that line. If the child matches them correctly, proceed downward. To receive credit for a line, the child must correctly match one more than half of the symbols on a line. The number recorded as the visual acuity is the smallest line the child can read or match correctly. It is permissible to use line or single letter isolation when presenting the chart symbols. Letter isolation should be used only if the screener feels it is absolutely necessary in order to obtain any screening results. Repeat the procedure for the left eye, and then both eyes. When documenting test results, if isolation is used, indicate which isolation strategy was utilized.

HOTV SYMBOLS
(continued)

Pass: Three year olds: 10/20 (20/40) or better in each eye.
Four and five year-olds: 10/15 (20/30) or better in each eye.

Fail: Three year olds: 10/25 (20/50) or worse in either eye, or a two or more line difference, i.e. 10/10 10/20 (20/20 - 20/40).
Four and five year-olds: 10/20 (20/40) or worse in one or both eyes.

Screening special populations: For some children with disabilities it may be useful to photocopy the response card, cut it into four sections, and space them so that gross movements can be used when indicating the matching symbol.

COLOR VISION TEST

- Ages:** Three years to eight years; at first health assessment or school entry - priority
- Purpose:** To detect color discrimination problems.
- Description:** Color vision is screened by having the individual read numbers or follow lines on specially designed color plates.
- Equipment:** Color plates: Ishihara Tests for Color-Discrimination, American Optical, or other color vision tests.
Form for documentation.
- Procedures:** If individual uses glasses for near vision, screen with glasses on.
- The test book should be positioned to eliminate glare at a distance of 30" from face at eye level and perpendicular to floor. Instruct the individual to read the numbers or follow the winding lines according to test instructions.
- If the individual does not know numbers, instruct the individual to "follow the path" or "follow the winding lines" by tracing figure in the air with finger for each of the test plates. The individual should not use a pencil, eraser, finger or other object that could mark or deface the test plates.
- Pass:** Follow pass criteria included in the test used.
- Fail:** Follow fail criteria included in the test used.
- NOTE:** No referral to an eye care specialist is necessary if this is the only test failed. A sample letter for notifying parent/guardian of an individual's difficulty with color vision is provided in the Appendix. Failure to pass the color vision test should be documented in the student's school health folder or file.

PLUS LENS FOR HYPEROPIA

- Ages:** Five years and older - priority
- Purpose:** To determine excessive hyperopia in an individual who has passed one of the distance acuity tests with 20/20 or 20/30 results.
- Description:** Plus lenses are placed on the individual and with (L) eye, (R) right eye and both eyes an attempt is made to read the line that was passed with the distance acuity test.
- Equipment:** +2.00 lenses for all screened
Distance acuity chart
Form for documentation.
- Facilities:** Room at least 5 feet longer than test distance, well lighted, and without glare.
- Procedure:** Refer to page 33 for directions on screening individuals with glasses.
- After the eyes have been checked for distance visual acuity, the plus lens procedure is done at the same distance. Place the plus lenses on the individual and request the person read the line on the chart at which distance acuity was passed with both eyes. The individual should attempt to read with the glasses for at least 15 seconds, but probably not more than a minute (often can see better the longer the plus lenses are worn).
- Pass:** Inability to read more than half the symbols on the line where distance acuity was passed.
- Fail:** Ability to read more than half the symbols on the line where distance acuity was passed.
- NOTE:** Emphasis should be placed on inability to see using the lenses, which indicates normal vision. The statement should be made following the use of test.

NEAR ACUITY TEST

Ages: Five years and older - priority

Purpose: To determine near visual acuity.

Description: Visual acuity is checked at normal reading distance of 14" – 16" with letters or symbols presented in a linear fashion.

Equipment: Pre-measured tape, string or yardstick
Occluder
Sloan or HOTV near acuity card
Form for documentation

Procedure: If individual wears glasses all the time or for reading, test with glasses on.

Vision is screened in the right eye first, with the left eye occluded. Begin with the 20/40 line. With children suspected of having low vision, start with the largest symbol on the chart. To receive credit for a line the child must correctly read one more than half the symbols on that line. It is not necessary to test beyond the 20/20 line. The number recorded as the visual acuity on the screening record is the smallest line on which the child correctly read more than half the symbols.

Next, the left eye is screened with the right eye occluded. Finally, both eyes are screened together. The same screening and reporting format is followed.

If using the Sloan letter chart with three columns on lower portion of chart, the following is suggested: start screening with right eye using right column, left eye using left column and both eyes using middle column.

Pass: The individual passes if acuity is 20/30 or better in each eye.

Fail: The individual fails if acuity is 20/40 or worse in one or both eyes.

Screening special populations: If the person screened does not know the alphabet or seems unduly confused, use the near tumbling E test or another near point test such as HOTV.

STEREOSCOPIC INSTRUMENTS

(Machine Testing)

- Ages:** Six years and older.
- Purpose:** To determine acuity, muscle balance, color vision and depth perception.
- Description:** These instruments contain separate plates for each type of screening listed above.
- Equipment:** One of the following:
Bausch & Lomb School Vision Tester
Keystone Telebinocular Screener
Titmus Vision Screener
Form for documentation
- Facilities:** Table or stand for placement of instrument, chairs.
- Procedure:** Each of these instruments has a corresponding manual for its proper use. Refer to the manual for the procedures to be used.
- Pass:** Refer to the manual for the instrument used.
- Fail:** Refer to the manual for the instrument used.
- Screening special populations:** Since these instruments require a verbal response for testing, special education students may require the use of the tests described previously which allow nonverbal responses. Machine testing is not recommended for children ages five and younger.

USHER SYNDROME SCREENING TESTS

- Ages:** 6 years to 21 years born with congenital deafness or hard of hearing.
- Purpose:** To detect onset of retinitis pigmentosa in the congenitally deaf population of students that possibly could result in Usher Syndrome.
- Description:** It will be necessary to complete family history and behavior characteristic questionnaire for students with congenital deafness. Based on the results of history, they may proceed to station screens. Station screens will consist of educationally oriented visual field loss test, balance test and cone adaptation test.
- Equipment:** Family History Questionnaire
Behavior Checklist
Student Interview (if applicable)
Visual Field Test Form
Cone Adaptation Test Form
Balance Test Form
Interpreter
- Facilities:** One room with little glare and with light controls.
- Procedure:** Refer to the Usher Screening Manual for forms, screening procedures, and other needed information.
- NOTE:** The Usher Screening Manual is available from the Kansas State Department of Education, 120 E 10th, Topeka, Kansas 66612-1282, 785-296-0917.

APPENDIX

SUMMARY OF REFERRAL CRITERIA

SCREENING PROCEDURE	AGE	REFERRAL CRITERIA
Eye Lid Reflex	Birth to 6 months	Failure to blink when hand moved vertically in front of face.
Fixation	Birth to 6 months <i>recommended for 6 mo.-5yrs. if concern is present</i>	Failure to fixate on object or fixation with one eye only.
Tracking	Birth to 3 years <i>recommended for 3-8 yrs. if concern is present</i>	Movement of one eye only, failure to maintain gaze at object or head movement without eye movement.
Pupil Response	Birth to 3 years <i>recommended for 3-21 yrs. if concern is present</i>	Either pupil fails to react to light source or reaction is asymmetrical.
Teller Acuity Cards	Birth to 3 years and special needs	Referral criteria in Teller Acuity Card Handbook
Photo Refractor/ PhotoScreener™	6 months to 5 years and special needs	Optometrist or Ophthalmologist to assist with photo evaluation and referral recommendations. Also address referral criteria in PhotoScreener™ Handbook
Corneal Light Reflection	Birth to 8 years	Reflection of penlight does not appear in the same position in each pupil.
Cover-Uncover Test	6 months to 5 years <i>recommended for 5-21 yrs. if concern is present</i>	Child does not maintain fixation when both/either eye is covered or uncovered.
Near Point of Convergence	6 months to 8 years <i>recommended for 8-21 years if concern is present</i>	Inability to converge to within 3 inches from bridge of nose, poor fixation of eyes to object beyond 3 inches from bridge of nose or asymmetrical response between eyes.
Worth 4-Dot (Fusion Test)	18 months to 8 years	Two, 3 or 5 dots are counted, pointed to or touched.
Depth Perception (Stereopsis)	18 months to 8 years <i>8-21 yrs. if no record</i>	Fingers touch book's surface.
Random Dot E	2-1/2 years & older	Child is unable to identify Raised E card four times in a row within eight trials.
Distance Acuity	3 years old: 4 years and older:	20/50 or worse in one or both eyes or two or more lines difference between eyes. 20/40 or worse in one or both eyes or two or more lines difference between eyes.
Color Vision	3 years to 8 years <i>8-21 yrs. if no record</i>	Inform parents, teachers, childcare providers and document on record. Do not refer.
Plus Lens	5 years and older	Ability to read more than half the symbols on line at which distance acuity is passed with either or both eyes.
Near Acuity	5 years and older	20/40 or worse in one or both eyes or two or more lines difference between eyes (or as specified by test used).

REFERENCE LIST

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- Preslan, M.S. & A. Novak, "Baltimore Vision Screening Project." *Ophthalmology*, 1996, pp.171-175.
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DEFINITIONS

ACCOMMODATION:	The eye's ability to adjust its focus by the action of the ciliary body. This permits the lens of the eye to thicken, increasing its focusing power. Accommodation allows the eye to focus on near objects. As we get older the lens of the eye becomes less flexible and its ability to change focus decreases.
ACUITY:	(visual acuity) clearness of sight. Depends on the sharpness of images and the sensitivity of nerve elements in the retina. A measure of a person's visual acuity compared against visual norms. AT REST - normal condition of the eye when viewing objects 20 feet or more away. At closer distances, the lens changes shape to focus the image clearly on the retina.
ASTIGMATISM:	See Refractive Error
AMBYOPIA:	Dimness of vision without detectable organic lesion of eye.
BINOCULAR VISION:	The brain's ability to combine the images from each eye into a single, three-dimensional object. Problems in binocular vision ability can include double vision, blurred vision, problem with depth perception, headaches or loss in visual efficiency and comprehension.
BLIND SPOT:	The area on the retina where the optic nerve enters the eyeball. This small area has no visual receptor cells and creates a natural blind spot on the retina. In normal binocular vision, each eye "covers" the other eye's blind spot, producing a full visual field.
CATARACT:	Pathological condition. Opacity or cloudiness of the crystalline lens that may prevent a clear image from forming on the retina. May be congenital or caused by trauma, disease and/or age.
CENTRAL VISUAL ACUITY:	Ability of the eye to perceive the shape of objects only in the direct line of vision.
COLOR VISION:	Perception of color, results from stimulation of the cone system of the eye. The cones are our most precise light receptors, able to distinguish fine detail and colors, but require bright light to function effectively.
CONES:	The highly specialized conical or flask-shaped outer segments of the visual cells; together with the retinal rods, they form the light-

sensitive elements of the retina. Also called cone cells, visual cones and retinal cones.

CONJUNCTIVITIS:	(Pink eye) Pathological condition. Inflammation of the conjunctiva (membrane that covers the white of the eye and inner surfaces of the eyelids) characterized by discharge, grittiness, redness and swelling. Can be contagious.
CONVERGENCE:	The simultaneous turning in of both eyes that occurs when viewing an approaching object. An effort to maintain single binocular vision as the object approaches.
CORNEA:	The transparent, blood-free tissue covering the central front of the eye where initial refraction, or bending, of light rays occurs as light enters the eye. Contact lenses are fitted over the cornea.
CORTICAL VISUAL IMPAIRMENT (CVI):	Temporary or permanent visual impairment caused by disturbance of the posterior visual pathways and/or the occipital lobes of the brain. The degree of vision impairment can range from severe visual impairment to total blindness. The presence of CVI is not an indicator of the child's cognitive ability.
DEPTH PERCEPTION:	The ability to judge distances by interpreting size, shape, shadows, and overlapping images.
DIPLOPIA:	The seeing of one object as two.
DIVERGENCE:	The simultaneous turning out of both eyes when viewing an object moving away from the eyes.
DOMINANT EYE:	The eye that "leads" its partner during eye movements. Humans also have dominant tendencies in hands, feet, and brain halves.
ESOTROPIA:	(Cross eyes) Functional defect. Misalignment of the eyes in which one eye deviates inward (towards nose) while the other fixates normally. Deviation is present when both eyes are uncovered.
EXOTROPIA:	(Wall-eyed) Functional defect. Misalignment of the eyes in which one eye deviates outward (away from nose) while the other fixates normally. Deviation is present when both eyes are uncovered.
FOCUS:	The eyes ability to see objects clearly at various distances through precise refraction or bending of light rays by the lens to place them exactly on the retina.

GLAUCOMA:	Pathological condition. Group of diseases characterized by increased intra-ocular pressure that results in damage to the optic nerve and to retinal nerve fibers. A common cause of preventable blindness.
HYPEROPIA:	See refractive error.
HYPERTROPIA:	The abnormal turning of one eye in an upward direction, while the fixating eye focuses straight ahead.
IRIS:	The colored part of the eye. A thin circular membrane that opens up and closes down to regulate the amount of light entering the eye.
LENS:	A transparent, elastic body behind the iris which changes shape to focus on objects at different distances from the eye. At rest, the lens is about the size of an aspirin tablet; it becomes more round when focusing at near.
LEGALLY BLIND:	Functional defect. Best corrected by visual acuity of 20/200 or less, or a visual field reduced to 20 degrees or less in the better seeing eye.
MACULA:	The most sensitive part of the retina, about the size of a pinhead, where our most detailed vision occurs.
EXTRA OCULAR MUSCLES:	The muscles attached to the outside of the eyeball that control eye movement. Each eye has six such muscles, coordinated by the brain. This is the reason that sudden occurrence of uncoordinated eye movements could be a sign of brain or nerve damage.
MYOPIA:	See Refractive Error.
NEAR POINT OF ACCOMMODATION	This is a measure of the distance from the eye to the nearest point at which print can no longer be kept clear. It varies according to the power of accommodation.
NEAR POINT OF CONVERGENCE:	The nearest point at which the two eyes can direct their visual lines, normally about 3" from the eyes in young people.
NEAR VISION:	The ability to perceive distinctly objects at normal reading distance.
NYSTAGMUS:	(Jerky eyes) A condition in which the eyes involuntarily move rapidly from side to side, up and down or in a rotary fashion.

OPTIC NERVE:	The bundle of nerve fibers, roughly the thickness of a pencil, which connects each eye to the brain. Images are transmitted through the optic nerve from the retina to the brain.
PUPIL:	Variable-sized, black circular opening in center of iris; regulates amount of light that enters the eye.
PTOSIS:	(toh-sis) Functional defect. Drooping of upper eyelid. May be congenital or caused by paralysis or weakness of either 3rd (oculomotor) cranial nerve or sympathetic nerves, or by excessive weight of upper eyelids.
REFRACTION:	Determination of the refractive error of an eye and the best corrective lenses to be prescribed; series of test lenses in graded power are presented to determine which provides sharpest, clearest vision.
REFRACTIVE ERROR:	The eye's inability to focus images clearly on the retina, typically due to either an inability of the lens to focus (accommodate), a distortion (astigmatism), or an abnormal distance (either too long or too short) from the cornea to the retina.
1) MYOPIA	The condition in which the eye at rest focuses light rays in front of, rather than on, the retina. Myopia is caused by the eyeball being too long, front to back, and results in near objects being seen clearly but distant objects seen with blurred vision. Myopia can be corrected with concave corrective lenses.
2) HYPEROPIA	A refractive error in the lens of the eye, in which parallel rays of light focuses behind the retina, resulting in difficulty in near vision. Hyperopia can be corrected with convex lenses.
3) ASTIGMATISM	Distorted vision, typically caused by an abnormally shaped cornea. When the cornea is not perfectly spherical in shape, two different images may be formed in the same eye, creating distorted and blurred vision and producing eyestrain or headaches. Astigmatism often accompanies myopia and hyperopia and may change gradually over time. Regular astigmatism can be corrected with specially shaped corrective lenses. Irregular corneal astigmatism can sometimes be corrected with contact lenses. Astigmatism can also be caused by irregular shape of other structures of the eye, such as the retina or the lens.

RETINA:	The back part of the eye that contains the cells that respond to light. These specialized cells are called photoreceptors. There are two types of photoreceptors in the retina: rods and cones.
RETINITIS PIGMENTOSA	The name given to a group of inherited eye diseases that affect the retina. This causes the degeneration of photoreceptor cells in the retina. As these cells degenerate and die, patients experience progressive vision loss.
RODS:	Light-sensitive retinal receptor cells specialized to work at low light levels (night vision). There are about 120 million rods in the retina.
SIGHT:	The eye's ability to detect light, form and motion. Clear sight depends upon the eye's ability to send clear, accurate signals to the brain.
STEREOSCOPIC VISION:	The ability to see three-dimensionally. Requires adequate fusion of the images from each eye.
STRABISMUS:	When the eyes don't line up or move together properly, we call it strabismus or heterotropia. If an eye deviates inward, it is esotropia (cross eyed); if it deviates outward, it is exotropia (walleyed). Eyes may also deviate up or down.
VISION:	The ability to interpret and gain meaning from the things we see. Vision not only requires sight, but also interpretation, association and memory skills. Vision problems can include difficulties in eye-hand coordination, object location, visual discrimination, or visualization.
VISUAL FIELD:	(Field of vision) Extent of space visible to an eye as it fixates straight ahead measured in degrees away from fixation.
VISUAL PATHWAY:	Route of the nerve impulses from the retina along the optic nerve, and optic nerve radiations to the brain's sensory cortex, located at the base of the skull.
VISIBLE SPECTRUM:	The colors visible to the human eye: red, orange, yellow, green, blue, indigo, and violet.

REPORT OF VISION SCREENING FOR REFERRAL TO OPHTHALMOLOGIST OR OPTOMETRIST**To be completed by agency:**

Name of Agency: _____
 Address: _____ City: _____ Zip: _____
 Child's Name: _____ Grade (if app.): _____ D.O.B.: _____
 Parent/Guardian: _____
 Address: _____ City: _____ Zip: _____

Performance on Vision Screening Test: _____
 Date of test _____ Signature of screener _____

SCREENING (check appropriate box) ☐ with glasses ☐ without glasses

1) DISTANCE VISION ACUITY _____ right eye _____ left eye _____ both
 2) NEAR VISION ACUITY _____ right eye _____ left eye _____ both
 3) PLUS LENS TEST _____ pass _____ fail
 4) CORNEAL LIGHT REFLEX _____ pass _____ fail
 5) DEPTH PERCEPTION _____ pass _____ fail
 6) EYE LID REFLEX _____ pass _____ fail
 7) NEAR POINT OF CONVERGENCE _____ pass _____ fail
 8) FIXATION _____ pass _____ fail
 9) TRACKING _____ pass _____ fail
 10) PUPIL RESPONSE _____ pass _____ fail
 11) FUSION _____ pass _____ fail
 12) USHERS SYNDROME _____ fail
 _____ Cone Adaptation _____ Balance

Referral made on basis of other screening procedure (specify) _____

The following is to be completed by the eye care specialist. The eye care specialist should return form to the referring agency.

DIAGNOSIS (primary and secondary) _____

ACUITY	RIGHT EYE	LEFT EYE	BOTH
Distance: Vision acuity without glasses	_____	_____	_____
Vision acuity after correction	_____	_____	_____
Near: Vision acuity without glasses	_____	_____	_____
Vision acuity after correction	_____	_____	_____

Field limitation? Y N What is the widest diameter (in degrees) of remaining vision field? _____ right eye _____ left eye _____ both

RECOMMENDATIONS OF EXAMINER -- ☐ ophthalmologist ☐ optometrist ☐ other (specify) _____
 If restriction of physical activity is required please specify _____
 Lighting requirements: Average _____ Better than average _____ Less than average _____
 Recommended glasses: (check appropriate items) ☐ constant ☐ near only ☐ distance only ☐ none
 Comments: _____
 Prognosis: _____ Date of next visit: _____

ADDRESS OF EXAMINER: _____
 SIGNATURE OF EXAMINER: _____ DATE: _____

RELEASE OF INFORMATION:
 I hereby authorize the release of the results and recommendations from this examination to Part C Infant-Toddler Services, educational, and/or health officials.
 RELEASE TO (name of agency) _____
 SIGNATURE (parent/guardian) _____ Date: _____
 ADDRESS (parent/guardian) _____

SCHOOL HEALTH
VISION SCREENING REFERRAL

CHILD'S NAME _____ GRADE _____

SCHOOL _____ TEACHER _____

Dear Parent:

Your child's eyes were screened by the school nurse as one of the health services provided by this school. The results of the screening test indicate the need for a more complete eye examination. The nurse's findings are recorded on the top half of the referral form on the back of this letter.

Since uncorrected disorders can affect learning potential, it is important to complete this referral.

PLEASE TAKE THE ATTACHED FORM WITH YOU WHEN YOU TAKE YOUR CHILD FOR THE EXAMINATION.

HAVE THE EYE PROFESSIONAL FILL OUT THE RESULTS OF THE EXAM AND RETURN THE COMPLETED FORM TO ME AT THE SCHOOL.

IF YOUR CHILD IS ALREADY RECEIVING EYE CARE FROM A PROFESSIONAL, PLEASE LET ME KNOW THE DATE HE/SHE WAS LAST SEEN.

IF YOU HAVE PROBLEMS OR NEED HELP COMPLETING THE REFERRAL, PLEASE CALL ME AT _____.

THANKS FOR KEEPING YOUR CHILD HEALTHY.

HEALTHY CHILDREN LEARN BETTER.

School Nurse

Telephone

Referral Date to Parents/Guardian

Adapted from the South Carolina School Health Guidelines 1994
KDHE 1/04

PARENT NOTIFICATION REGARDING COLOR VISION TEST

AGENCY

To the parents of: _____

Date of Birth: _____

Screening Center: _____

Date: _____

During a recent vision screening, results indicate that your child/adolescent has some difficulty with color vision. Although this problem generally cannot be corrected, and usually does not affect how a person sees, it is important that the child and people working with him/her are aware of this color vision problem.

The main reason for color vision testing is to alert the individual about the color deficiency. In the future there may be implications in planning or preparing for certain jobs or careers. There are also implications in the school or daycare setting when performing tasks that require color vision.

Information regarding results of the color vision test will be recorded on the child's health records and shared with those who need to know in the work, school, or daycare setting.

Further information concerning color vision may be obtained from a school or public health nurse, pediatrician, ophthalmologist, or optometrist. It is not necessary for your child to be seen by an eye care specialist for a color vision problem.

Additional Remarks:

Vision Screener: _____

Agency: _____

Date to Parents/Guardian: _____

FEEDBACK ON VISION REFERRAL
FROM PARENT/GUARDIAN

Dear Vision Screener:

In response to the vision referral to us on _____, my/our decision on behalf
of _____ is the following (please check):
(date)
(Name of Individual)

- ☐ I/We disagree with the need.
- ☐ An eye care specialist has seen individual within the last 6 months.
- ☐ An appointment with the eye care specialist is scheduled on _____.
(date)
- ☐ Financial assistance will be necessary if follow up occurs.
- ☐ Other (please state in space below)

Sincerely,

(Signature of Parent/Guardian)

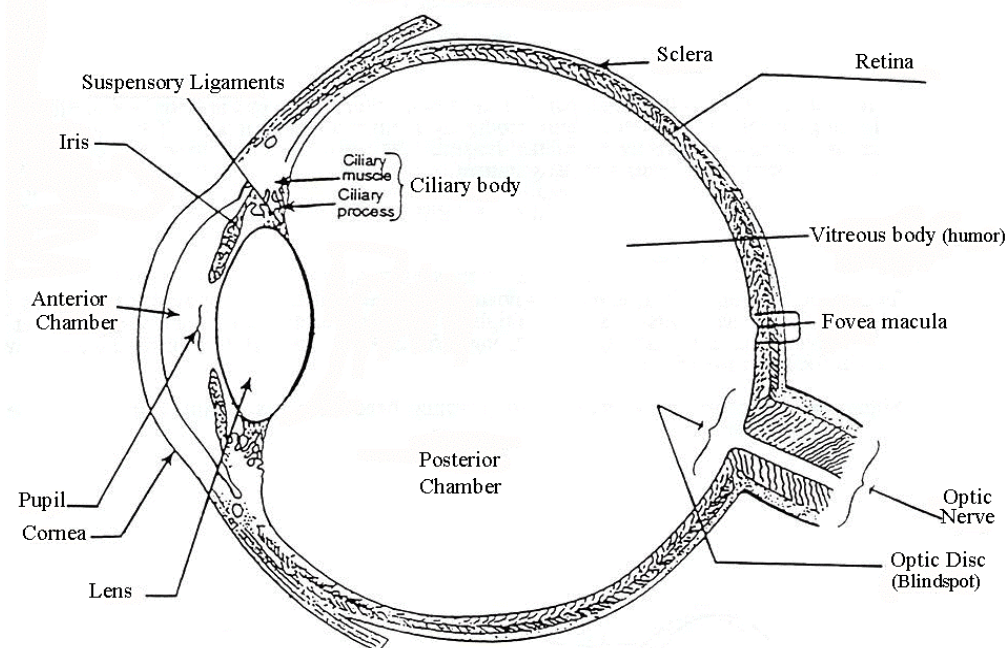
Address: _____

Phone #: _____

Date: _____

Please note: Return this letter to the referring vision screener within one month of the date of the vision referral. (Include return address from referring agency.)

ANATOMY OF THE EYE



Anterior Chamber

space between the cornea and the lens

Ciliary Body consists of:

Ciliary muscle - which changes the thickness of the lens

Ciliary processes - which secrete aqueous humor

Cornea

transparent, blood-free tissue covering the central part of the eye

Fovea

tiny depression in the center of the macula, area of greatest sensitivity

Iris

colored part of the eye

Lens

small transparent structure lying behind the iris

Macula

spot about the size of a pinhead on the retina, the area of clearest vision

Optic Disc

head of the optic nerve

Optic Nerve

bundle of nerve fibers that connect each eye to the brain via the visual cortex

Posterior Chamber

filled with vitreous humor, a transparent jellylike substance

Pupil

round opening in the center of the iris

Retina

light-sensitive tissue lining the back of eye

Sclera

white portion of the eye; covers all portions of the eye except where it is replaced by the cornea

Suspensory Ligaments

hold the lens in place

REFRACTIVE ERRORS

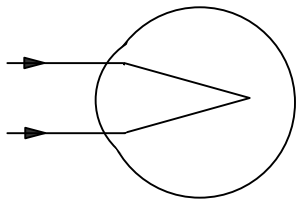
A refractive error occurs when parallel light rays entering the eye are not brought to a sharp focus precisely on the retina, thus producing a blurred retinal image. This can be corrected by wearing eyeglasses or contact lenses. The main refractive errors found in children are hyperopia, myopia and astigmatism.

Hyperopia - Farsightedness

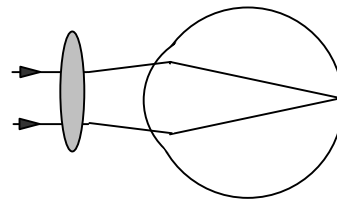
The eyeball is generally smaller than normal and the parallel light rays come to a focus point behind the retina. This person is farsighted and sees more clearly at a distance than at near. A convex lens is given ranging in strength from +0.25 to +20.0 to bring the light rays together in focus on the retina.

Signs and symptoms: Squinting while reading, headaches - especially with doing close work, esotropia, fails near vision.

Hyperopia Diagrams:



Hyperopic eye



**Hyperopic eye corrected
with convex lens**

REFRACTIVE ERRORS

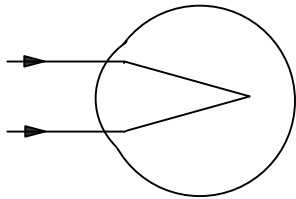
(continued)

Myopia - Nearsightedness

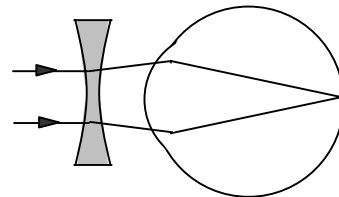
The eyeball is longer than normal and the parallel light rays come to a focus point in front of the retina. This person is nearsighted and sees more clearly at near. Myopia often begins in the first decade of life and progresses until it stabilizes between the ages of 20 and 30. A concave lens is given ranging in strength from -0.25 to 20.0 to bring the light rays in focus on the retina.

Signs and symptoms: Squinting at distance objects, blurred distant vision, frequent headaches or eye strain, squinting or feeling fatigued when driving or playing sports, fails distant visual acuity.

Myopia Diagrams:



Myopic eye



**Myopic eye corrected
by concave lens**

REFRACTIVE ERRORS

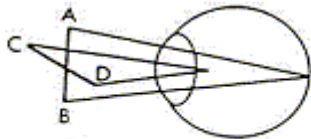
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Astigmatism

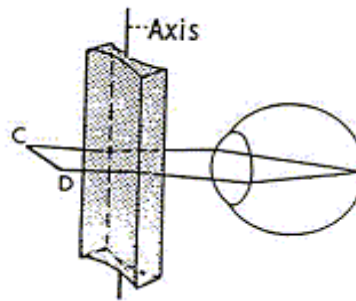
The curvature of the front of the cornea and or lens is irregular. Parallel light rays entering through the cornea and lens do not come to a focus point on the retina. The power of a corrective lens is positioned at an angle to correct the defect and bring the light rays together in focus on the retina. Astigmatism can occur alone or in combination with hyperopia or myopia.

Signs and symptoms: Squinting, double vision or ghost images, blurred distant and near vision.

Astigmatism Diagrams:



Myopia astigmatism



**Myopia astigmatism
corrected with a Myopic cylinder,
axis 90°**

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